

REMARKS/ARGUMENTS

Claims 1-6, 11-13, 15, 16, and 18-26 remain in this application. Claims 7-10, 14, and 17 are cancelled, without prejudice. Claims 25 and 26 are new.

Basis for Amendment

Applicants submit that the forgoing amendments do not add new matter to the present application.

The foregoing amendment to claim 1 is based on the present specification at p. 12, line 15. New claim 25 is based on previously-pending claims 12 and 21. New claim 26 is based on previously-pending claim 11.

Response to rejection of claims 1-6, 11-20, and 22-24 over Irie in view of Straw

In the above-identified Office Action the Examiner rejected claims 1-6, 11-20, and 22-24 under 35 USC §103(a) as being obvious over Irie (US 5,959,028) in view of Straw (US 2003/0165701).

Applicants respectfully traverse the rejection. Applicants submit that the invention of Straw has more than 5% by weight of non-reactive volatile compounds and that. Applicants submit that, therefore, this particular feature of present claim 1 (i.e., 5% or less by weight of non-reactive volatile compounds) is not taught by either Irie or Straw.

Present claim 1 limits the amount of all volatile compounds, including water. Present claim 1 recites the feature "5% or less by weight non-reactive volatile compounds, based on the total weight of said curable mixture." The non-reactive volatile compounds that are limited to 5% by weight or less are those non-reactive compounds that have boiling point of 120°C or less. "Non-reactive" compound is defined in the present specification, on p. 12, lines 11-12, as compound that is neither Michael donor nor Michael acceptor. Water is neither a Michael donor nor a Michael acceptor, and its boiling point is 100°C. Therefore the composition of present claim 1, if it contains any water at all, must contain 5% or less water by weight.

The compositions of Straw's invention contain more than 5% water by weight. Straw characterizes his compositions as "water borne" (abstract and paragraph [0013]). As verified by the Declaration of Dr. Chen (attached hereto), a water borne composition must have more than 5% water by weight. Also, in all of Straw's examples, his curable composition have 27.5% or more water by weight. Some of Straw's "pack 2" compositions contain only Michael acceptor and have no water. Straw's "pack 2" is not a curable composition, since it contains only Michael acceptor and contains no Michael donor. All of the curable compositions (i.e., those with both Michael donor and Michael acceptor) in Straw's examples are water borne and have at least 27.5% water by weight.

Straw uses the phrase "volatiles should be removed" in paragraph [0039]. As verified in the Declaration of Dr. Chen (attached hereto), Straw's paragraph [0039] refers to the preparation of a "pack 2" and does not refer to the preparation of a curable composition. Thus Straw does not teach or suggest removing volatiles from a curable composition.

Straw mentions, in paragraph [0003],

Liquid polymers and oligomers can be cross-linked to form tough hard coatings, so that the coating composition need have little or no volatile organic solvent to achieve a viscosity suitable for spray application.

Applicants submit that Straw's paragraph [0003] is not a discussion of Straw's invention but is, along with paragraphs [0004] through [0010] a discussion by Straw of compositions that demonstrate various drawbacks. After discussing these drawbacks, Straw states in paragraph [0011], "Consequently, there is a need for a water borne Michael curing coating compositions having a long pot life." Straw also refers to paragraphs [003] through [0010] when he states, in paragraph [0013], that his invention "provides a solution to the above-mentioned problems and disadvantages."

Straw therefore teaches that his water borne compositions solve problems posed by the other types of compositions mentioned in his "Background of the Invention" section. Thus Straw teaches away from using all the compositions described in his

"Background of the Invention" section in favor of using the water borne compositions of his invention.

Consequently Applicants submit that Straw does not teach or suggest using compositions that are not water borne. That is, Straw teaches compositions that have more than 5% water by weight, and water is a non-reactive volatile compound (as defined in the present claims). Therefore Straw does not teach or suggest any composition with 5% or less of non-reactive volatile compounds.

Irie, like Straw, fails to teach or suggest using compositions with 5% or less non-reactive volatile compounds. In the above-identified Office Action, the Examiner stated that "Irie does not disclose that the curable mixture comprises 5% or less by weight non-reactive volatile compounds" (page 5).

Because neither Irie nor Straw discloses the feature of 5% or less by weight non-reactive volatile compounds, there is at least one feature of present claim 1 that is not disclosed by Irie and Straw, alone or in combination. Consequently Applicants submit that the Examiner has not presented a *prima facie* case of obviousness. Therefore Applicants submit that present claim 1 is not obvious over Irie in view of Straw.

Because claims 2-6, 11-13, 15, 16, and 18-26 are dependent on present claim 1, Applicants submit that they are also not obvious over Irie in view of Straw.

Applicants note that new claims 25 and 26 also recite the feature that the "curable mixture does not contain any of the catalysts usually used for Michael addition reactions." Applicants submit that this feature provides an additional reason why new claims 25 and 26 are not obvious over Irie in view of Straw.

Response to rejection of claim 21 over Irie in view of Straw and Leake

In the above-identified Office Action the Examiner rejected claim 21 under 35 USC §103(a) as being obvious over Irie in view of Straw and further in view of Leake (US 6,521,716).

Applicants respectfully maintain that it would not be obvious to combine the teachings of Leake with those of Irie. As Applicants argued previously (in the paper of July 30, 2008), the teachings of Leake are limited to certain specific highly reactive

Michael donors and/or certain specific highly reactive Michael acceptors. Leake teaches that the ability to cure without base catalyst arises because of the highly reactive nature of his reactants.

Leake teaches that those compositions of his invention that cure without base catalyst are those particular compositions that contain Michael donors and/or Michael acceptors that are even more reactive than the general compositions of Leake's invention, which are already highly reactive. Leake teaches that, in general, many of the compositions of his invention "preferably contain a basic catalyst" (col. 21, lines 50-52). Leake teaches that certain exceptional compositions of his invention may be cured without catalyst, namely those with certain specific donors (col. 21, lines 52-53) and those with certain specific acceptors (col. 22, lines 20-22). That is, even among Leake's highly reactive reactants, only a subset are reactive enough to use in curable compositions that cure without base catalyst.

In contrast, Irie's teachings involve Michael donors and acceptors that are not highly reactive and that require strong base to catalyze the reaction. Irie's compositions involve Michael acceptors that are (meth)acrylics (col. 2, line 25), Michael donors that are malonates (col. 3, line 55), and strong base catalysts (col. 4, lines 21-24). Malonates and (meth)acrylates are normal Michael donors and acceptors. They are not considered by persons of ordinary skill to be highly reactive. Irie teaches that his Michael addition compositions require, as Michael additions normally require, "the presence of a strong base" (col. 4, line 22). Thus a person of ordinary skill would conclude that the Michael donors and Michael acceptors of Irie's invention require the presence of strong base catalyst.

In sum, Applicants maintain that it would not be obvious for a person of ordinary skill to combine the teachings of Irie and Leake. Irie teaches the use of malonates and (meth)acrylates and that these reactants require base catalyst. Leake teaches the use of different, highly reactive, Michael donors and/or Michael acceptors, only some of which are sufficiently reactive that they can cure without the presence of base catalyst. Thus a person of ordinary skill in the art would conclude that Irie's reactants would not cure without base catalyst, for two reasons that reinforce each other. First, Irie specifically

teaches that base catalyst is required for Irie's reactants. Second, Leake teaches that the only Michael-curing compositions in which base catalyst is not required are those with certain highly reactive reactants, which are different from Irie's reactants.

Because it would not be obvious for a person of ordinary skill to combine the teachings of Leake and Irie, Applicants submit that present claim 21 is not obvious over Irie in view of Straw and Leake.

New claims 25 and 26 have the same limitation regarding catalyst as present claim 21. Therefore Applicants submit that new claims 25 and 26 are also not obvious over Irie in view of Straw and Leake.

Conclusion

Applicants respectfully request the Examiner to examine the claimed subject matter and to allow claims 1-6, 11-13, 15, 16, and 18-26 at this time. If, however, there remain any open issues which the Examiner believes can be resolved by a telephone call, the Examiner is cordially invited to contact the undersigned agent.

No fees are believed to be due in connection with the submission of this amendment; however, if any such fees, including petition or extension fees, are due, the Commissioner is hereby authorized to charge them, as well as to credit any overpayments, to Deposit Account No. 18-1850.

Respectfully Submitted,



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